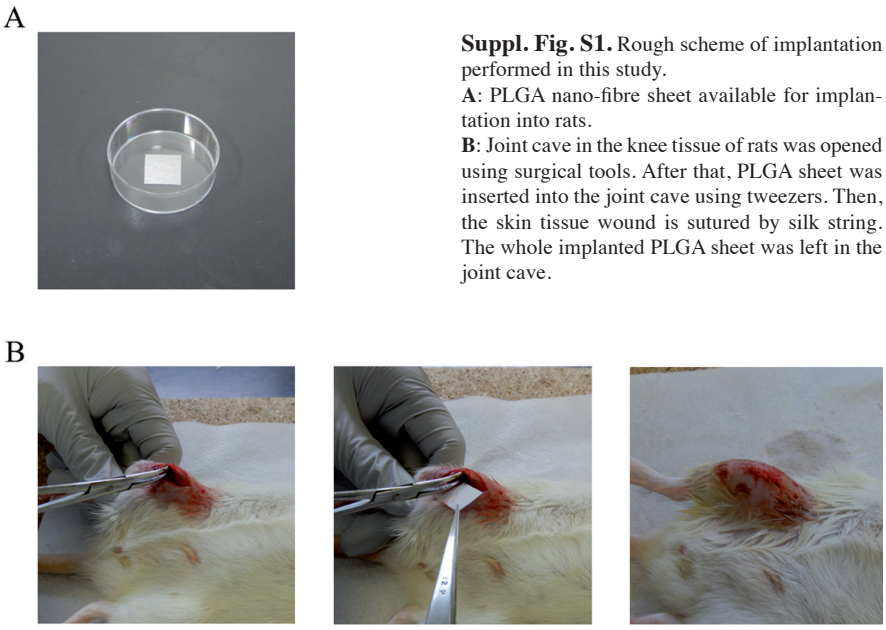
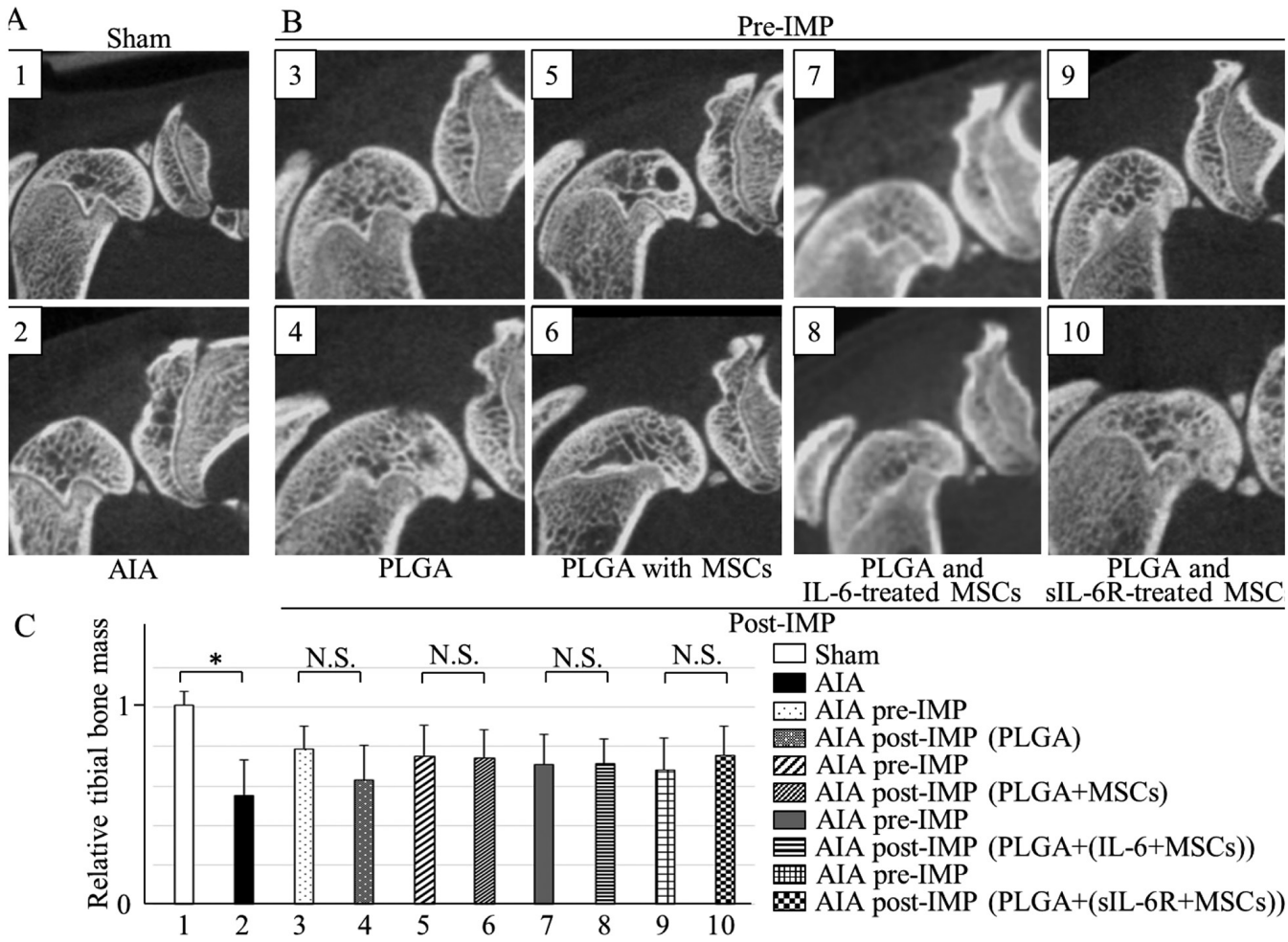
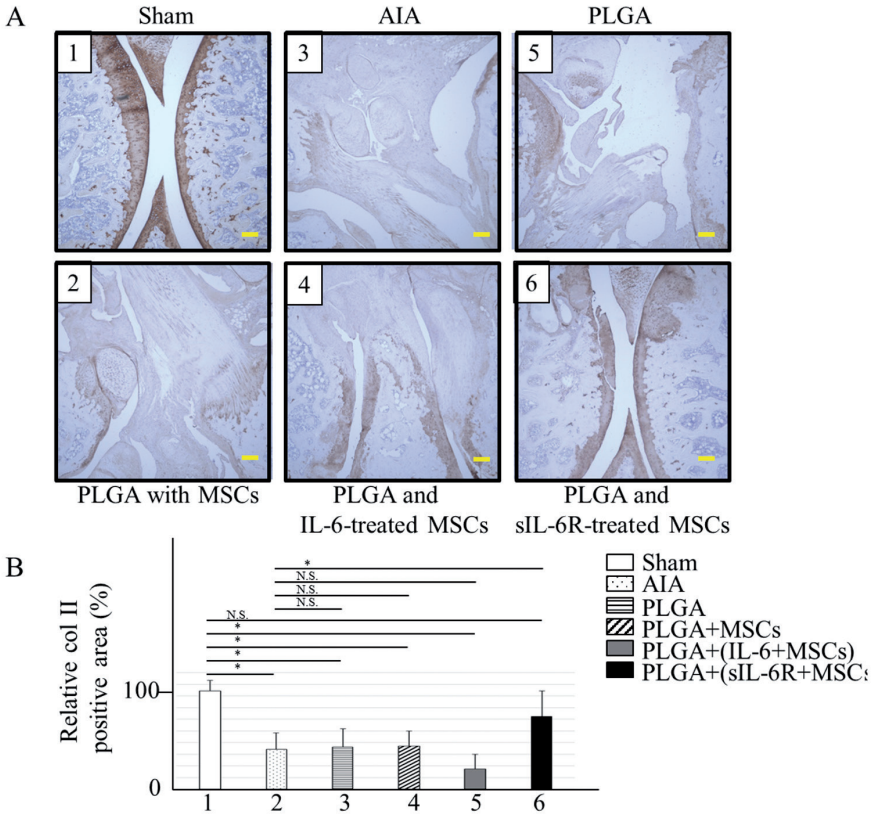


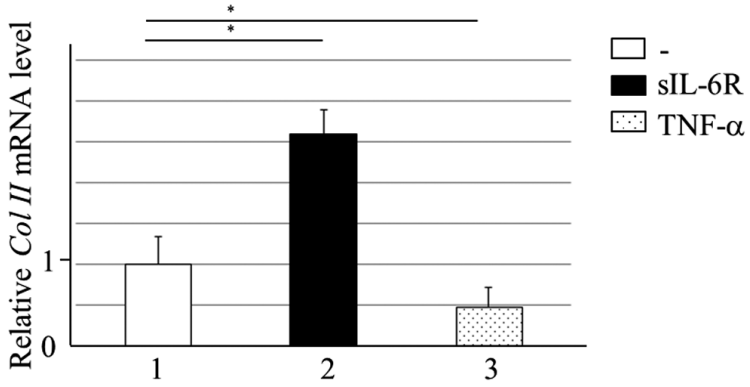
Suppl. Fig. S1. Rough scheme of implantation performed in this study.
A: PLGA nano-fibre sheet available for implantation into rats.
B: Joint cave in the knee tissue of rats was opened using surgical tools. After that, PLGA sheet was inserted into the joint cave using tweezers. Then, the skin tissue wound is sutured by silk string. The whole implanted PLGA sheet was left in the joint cave.



Suppl. Fig. S2. Amelioration of the bone tissue structure of AIA rats implanted with PLGA and sIL-6R-treated MSCs.
Representative micro-CT imaging was used to analyse in knee joints of **A**: sham Lewis (n=5) and AIA rats (n=5), and **B**: pre-IMP AIA (each n=5) and post-IMP AIA rats implanted with PLGA alone (n=5), PLGA with MSCs (n=5), PLGA and IL-6-treated MSCs (n=5), or PLGA and sIL-6R-treated MSCs (n=5). **C**: Quantification of tibial bone mass is shown. All quantitative data are expressed as mean ± standard deviation (SD) (each n=5). *p<0.01 *vs*. sham rat. AIA: antigen-induced arthritis; IMP: implantation; PLGA: poly-lactic-co-glycolic acid; MSCs: mesenchymal stem cells.



Suppl. Fig. S3. Increased deposition of type II collagen in articular cartilage tissue of AIA rats implanted with PLGA and sIL-6R-treated MSCs.
A: Immunohistochemical analyses to examine the deposition of type II collagen were performed in biopsy specimens of joints of sham Lewis rats (n=5), AIA rats (n=5), AIA rats implanted with PLGA alone (n=5), PLGA with MSCs (n=5), PLGA and IL-6-treated MSCs (n=5), or PLGA and sIL-6R-treated MSCs (n=5). Representative images are shown. Scale bar, 100 μm.
B: Quantification is shown. All quantitative data are expressed as mean ± standard deviation (SD) (each n=5). *p<0.*01 vs*. sham rat.
AIA: antigen-induced arthritis; PLGA: polylactic-co-glycolic acid; MSCs: mesenchymal stem cells; col II: type II collagen; NS: not statistically significant difference.



Suppl. Fig. S4. Contribution of sIL-6R into chondrogenic differentiation of MSCs.
MSCs (1x10*5) seeded on plate were cultured with chondrogenic induction medium, stimulated with or without sIL-6R or TNF-α for 5 days. Total RNA from respective cells was isolated and then subjected to real-time PCR to analyse the mRNA expression levels of *Col II* and *GAPDH*. The amount of *Col II* transcript was expressed relative to that of *GAPDH* transcript. Data are mean ± SD values of three independent experiments. *p<0.05 *vs*. without cytokines. MSCs: mesenchymal stem cells; col II: type II collagen; NS: not statistically significant difference.